

AF-3 NAS

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SELECTED ACQUISITION REPORT (RCS:DP-COMP(Q&A)823)

PROGRAM: NAS

AS OF DATE: September 30, 1994

AD-A286 336



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1. Designation and Nomenclature (Preferred Name):

National Airspace System (NAS)

2. DoD Component: USAF

Joint Participants:

Army, Navy

3. Responsible Office and Telephone Number:

ESC/TGN

11 Eglin Street

Hanscom AFB

Bedford, MA 01731-2120

Lt Col David MacKenzie

Assigned: April 15, 1994

AV 478-4947 COMM (617) 377-4947

4. Program Elements/Procurement Line Items:

RDT&E:

PE 0305137F, 0204696N, 0604633A

5. Related Programs:

Federal Aviation Administration (FAA) Capital Investment Plan (CIP) program.

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FOR OPEN PUBLICATION

OCT 28 1994 20

DIRECTORATE OF FREEDOM OF INFORMATION  
ANALYST/REVIEWER (OASD-PA)  
DATE OF REVIEW

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6. Mission and Description:

The DoD National Airspace System (NAS) program will modernize the DoD radar approach control facilities in parallel with the Federal Aviation Administration (FAA). DoD will acquire, to the maximum extent practical, systems on contract or systems to be on contract with the FAA to reduce development costs and prevent duplication. If the DoD does not modernize the DoD Air Traffic Control (ATC) system, the resulting reduced interoperability between current DoD and FAA facilities will negatively impact DoD flight operations. The DoD NAS program provides systems and facilities compatible/interoperable with the FAA modernization, prevents DoD flight delays and cancellations, continues DoD's access into Special Use Airspace, provides transparent services to military and civil aircraft, replaces aging DoD ATC systems, and increases flight safety. DoD will upgrade voice, data, and sensor systems as well as facility configurations and operations concepts to provide continued quantity and quality of ATC services to the aviation community. The NAS program also includes the Military Airspace Management System (MAMS) which will schedule and manage special use airspace. MAMS is an automated Special Use Airspace (SUA) scheduling and utilization reporting tool which will enable DoD to more efficiently manage SUA. DoD military ATC and fighting/flying readiness will be maintained.

7. Program Highlights:

a. Significant Historical Developments --

In Apr 93, one of three exit criteria, the demonstration of the Military Airspace Management System (MAMS) prototype software, was completed. The demonstration was accomplished at Edwards AFB, CA, where the prototype will be used operationally.

In Jun 93, the second of three exit criteria, demonstration of a repackaged Federal Aviation Administration (FAA) Common Console into the DoD configuration, was completed.

The MAMS Request for Proposal (RFP) was released on 2 Jun 93, and proposals were received in July. The MAMS EMD contract was awarded to Computer Based Systems, Inc. on 27 Jun 94.

The Semi-annual NAS program review was conducted on 2 Sep 93 by senior FAA and DoD personnel. Executive interagency agreements for test, procurement and support of FAA Automation Systems were signed completing the final exit criteria.

In support of DoD's radar approach control modernization, excellent progress was made towards creating joint FAA/DoD programs for automation, radar and voice switching. The FAA is modifying their Advanced Automation System (AAS) contract option structure with IBM

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7a. Program Highlights (Cont'd):

to accommodate the specific procurement needs of DoD. In addition, FAA and DoD personnel defined the approach for joint test of the Terminal Advanced Automation System (TAAS), a major segment of AAS. The FAA also coordinated plans to include DoD option quantities on the Digital Airport Surveillance Radar (DASR) and Enhanced Terminal Voice Switch (ETVS) programs. We continue to anticipate significant savings in reduced development and acquisition cost, and reduced logistics support costs, by modernizing DoD facilities with equipment procured jointly with the FAA.

b. Significant Developments Since Last Report --

The Milestone II Review experienced a six month or greater schedule delay requiring a quarterly SAR submittal. This and subsequent milestone changes are reflected in the AFAE approved APB of 27 May 1994. Limited reporting of only the Development program is permitted for Pre-Milestone II programs in accordance with Title 10, Section 2432, United States Code.

The NAS program is expected to satisfy all mission requirements.

c. Changes Since As Of Date -- None.

8. Threshold Breaches:

There are no breaches to the AFAE approved APB dated 27 May 1994. Munn-McCurdy unit cost reporting is not required for Pre-Milestone II programs, IAW Title 10, USC, Section 2433.

9. Schedule:

a. Milestones --

	Planning Estimate	Approved Program	Current Estimate
DOD ATCALS IN THE NAS			
Milestone 0	NOV 90	NOV 90	NOV 90
Milestone I	JUL 92	JUL 92	JUL 92
Milestone II	JAN 94	JAN 95	MAY 95 (Ch-1)
AUTOMATION (DAAS)			
Development Contract Award	MAR 94	N/A	N/A (Ch-2)
DT&E			
Start	JAN 95	JAN 96	JAN 96 (Ch-1)
Complete	MAR 96	MAR 97	MAR 97 (Ch-1)
IOT&E			

By	
D. L. 10/1	
Availability Codes	
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A-1	

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9a. Schedule (Cont'd):

Milestones (Cont'd) --	Planning <u>Estimate</u>	Approved <u>Program</u>	Current <u>Estimate</u>
Start	MAR 96	MAR 97	MAR 97 (Ch-1)
Complete	SEP 96	OCT 97	OCT 97 (Ch-1)
VOICE (VCSS)			
QOT&E			
Start	N/A	OCT 96	OCT 96 (Ch-3)
Complete	N/A	APR 97	APR 97 (Ch-3)
RADAR (DASR)			
QOT&E			
Start	N/A	FEB 98	FEB 98 (Ch-3)
Complete	N/A	AUG 98	AUG 98 (Ch-3)
Milestone III	MAR 97	MAR 98	MAR 98 (Ch-1)
Production Award/Exercise (VCSS/DAAS)	N/A	APR 98	APR 98 (Ch-3)
Program Review (DASH FPA)	N/A	NOV 98	NOV 98 (Ch-3)
Production Award/Exercise	APR 97	NOV 98	NOV 98 (Ch-1)
First Delivery	DEC 98	APR 99	APR 99 (Ch-1)
IOC (First DOD Site Activation)	OCT 99	APR 00	APR 00 (Ch-1)
FOC	APR 05	APR 06	APR 06 (Ch-1)
MAMS			
Development Contract Award	JUL 93	JUN 94	JUN 94 (Ch-4)
DT&E			
Start	OCT 95	SEP 96	SEP 96 (Ch-4)
Complete	MAR 96	FEB 97	FEB 97 (Ch-4)
IOT&E			
Start	APR 96	APR 97	APR 97 (Ch-4)
Complete	JUL 96	JUL 97	JUL 97 (Ch-4)
IOC (First Delivery)	JUL 96	JUL 97	JUL 97 (Ch-4)

ATCALS - Air Traffic Control and Landing Systems  
 IOC - Initial Operational Capability  
 FOC - Full Operational Capability  
 MAMS - Military Airspace Management System

b. Previous Change Explanations --

MAMS development contract award moved from July 1993 to May 1994 because the source selection took longer than expected. The subsequent milestones were adjusted to reflect this change.

c. Current Change Explanations --

(Ch-1) The Current Estimate of the Milestone II Review has slipped from April 1994 to May 1995. The revised schedule reflects DoD's impact due to the FAA terminating their automation program in their

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9c. Schedule (Cont'd):

effort to reduce cost and schedule overruns. The FAA has since initiated an NDI program for a new terminal automation system to which the DoD NAS baseline is synchronized. The schedule adjustment also resulted in slips to subsequent milestones.

(Ch-2) Development Contract Award is no longer applicable because there will be no development contracts awarded by either DoD or FAA for NAS equipment. The AFAE approved this milestone for deletion in the 27 May 94 revised APB.

(Ch-3) New milestones added with approval of AFAE APB dated 27 May 1994.

(Ch-4) The MAMS EMD contract was awarded to Computer Based Systems, Inc. on 8 June 1994 instead of May 1994. A larger number of proposals than anticipated resulted in a longer source selection.

d. References --

Planning Estimate:

AFAE Approved Acquisition Program Baseline dated 1 March 1993.

Approved Program:

AFAE Approved Acquisition Program Baseline dated 27 May 1994.

10. Performance Characteristics:

a. Performance --		Approved Program		Demonstrated Perf	Current Estimate	
	PE	Objective/Threshold				
DOD ATCALS IN THE NAS						
Automation Data/Voice Recording	Synchronized Playback	N/A	/ N/A	TBD	N/A	(Ch-1)
Inter/Intrafacility Data Transfer						
a. Auto Transfer of Position Track Data	N/A	IAW ICD	/ IAW ICD	TBD	IAW ICD	(Ch-1)
b. Electronic Interfacility Transfer of Flight Plans	N/A	IAW ICD	/ IAW ICD	TBD	IAW ICD	(Ch-1)

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10a. Performance Characteristics (Cont'd):

	PE	Approved Program <u>Objective/Threshold</u>		Demon- strated <u>Perf</u>	Current <u>Estimate</u>	
Automation Radar Presentation	Mosaic & Selec- tive Radar Display	N/A	/ N/A	TBD	N/A	(Ch-1)
Aircraft Tracked Medium (LCP)	N/A	900	/ 250	TBD	900	(Ch-1)
Automation Compatibility Data Processing	FAA AAS & Digital Radars	N/A	/ N/A	TBD	N/A	(Ch-1)
Radar Compatibility	Digital & Analog Auto- mation Systems	N/A	/ N/A	TBD	N/A	(Ch-1)
Radar Subclutter Visibility (dB)	N/A	55	/ 42	TBD	55	(Ch-1)
Voice Compatibility/ Interoperability	FAA Systems	Digital Voice Systems	/ Inter- face to existing FAA Systems	TBD	Digital Voice Systems	(Ch-1)
Voice Switch Lighting Environments	Radar Rooms & Control Towers	N/A	/ N/A	TBD	N/A	(Ch-1)
Voice System Interface Capability	Digital & Analog	N/A	/ N/A	TBD	N/A	(Ch-1)
Voice Recording	All Voice Inter- faces	N/A	/ N/A	TBD	N/A	(Ch-1)

NAMS

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10a. Performance Characteristics (Cont'd):

	PE	Approved Program Objective/Threshold		Demon- strated Perf	Current Estimate
Conflict Identification	Auto-mated	100% of con-flicts identi-fied; 85% of con-flicts identi-fied <or= 10 (sec)	/ 98% of con-flicts identi-fied; 85% of con-flicts identi-fied <or= 30 (sec)	TBD	100% of (Ch-1) con-flicts identi-fied; 85% of con-flicts identi-fied <or= 10 (sec)
Interface with FAA	Elec-tronic Data Transfer	Trans-mittal Time for 85% of messages between schedul-er and FAA <or= 5 (min)	/ Trans-mittal Time for 85% of messages between Schedul-er and FAA <or= 10 (min)	TBD	Trans- (Ch-1) mittal Time for 85% of messages between schedul-er and FAA <or= 5 (min)
Reporting	Auto-mated	Process-ing Time of Util-ization Data Requests <or= 1 (min); Total Manual and Automat-ic Report Genera-tion <or= 10 (min)	/ Process-ing Time of Util-ization Data Requests <or= 10 (min); Total Manual and Automat-ic Report Genera-tion <or= 30 (min)	TBD	Process- (Ch-1) ing Time of Util-ization Data Requests <or= 1 (min); Total Manual and Automat-ic Report Genera-tion <or= 10 (min)

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10a. Performance Characteristics (Cont'd):

ICD - Interface Control Document

b. Previous Change Explanations -- None.

c. Current Change Explanations --

(Ch-1) Current estimate of stub items changed to reflect approval of revised NAS and MAMS ORDs on 3 March 1994 and 11 March 1994 respectively. New ORDs portray a requested reduction in key parameters and quantify remaining parameters as required.

d. References --

Planning Estimate:

AFAE Approved Acquisition Program Baseline dated 1 March 1993.

Approved Program:

AFAE Approved Acquisition Program Baseline dated 27 May 1994.

11. Total Program Cost and Quantity (Current Estimate in Millions of Dollars):

	Planning <u>Estimate</u>	Approved <u>Program</u>	Current <u>Estimate</u>
a. Cost --			
Development (RDT&E)	102.1	102.1	101.9
Procurement	0.0	N/A	0.0
Peculiar Support	(0.0)		(0.0)
Initial Spares	(0.0)		(0.0)
Construction (MILCON)	0.0	N/A	0.0
Ops. and Maint. (O&M)	<u>0.0</u>	<u>N/A</u>	<u>0.0</u>
Total FY 90 Base-Year \$	102.1	102.1	101.9
Escalation	20.5	20.5	18.0
Development (RDT&E)	(20.5)	(20.5)	(18.0)
Procurement	(0.0)	(N/A)	(0.0)
Construction (MILCON)	(0.0)	(N/A)	(0.0)
Ops. and Maint. (O&M)	<u>(0.0)</u>	<u>(N/A)</u>	<u>(0.0)</u>
Total Then-Year \$	122.6	122.6	119.9
b. Quantity --			
Development (RDT&E)	0	0	0
Procurement	0	N/A	N/A
Total	0	0	0

c. Foreign Military Sales/International Cooperative Programs -- None.



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11d. Total Program Cost and Quantity (Cont'd):

d. Nuclear Costs -- None.

e. References --

Planning Estimate:

AFAP Approved Acquisition Program Baseline dated 01 March 1993.

Approved Program:

AFAP Approved Acquisition Program Baseline dated 27 May 1994.

12. Program Acquisition/Current Procurement Unit Cost Summary:

Note: Not required for Pre-Milestone II programs in accordance with  
Section 2433, Title 10, USC.

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13. Cost Variance Analysis:

a. Summary (Current (Then-Year) Dollars in Millions)

	RDT&E	PROC	MILCON	TOTAL
Planning Estimate	122.6	0.0	0.0	122.6
Previous Changes:				
Economic	-3.7	-	-	-3.7
Quantity	-	-	-	-
Schedule	-	-	-	-
Engineering	-	-	-	-
Estimating	+1.3	-	-	+1.3
Other	-	-	-	-
Support	-	-	-	-
Subtotal	-2.4	-	-	-2.4
Current Changes:				
Economic	-	-	-	-
Quantity	-	-	-	-
Schedule	-	-	-	-
Engineering	-	-	-	-
Estimating	-0.3	-	-	-0.3
Other	-	-	-	-
Support	-	-	-	-
Subtotal	-0.3	-	-	-0.3
Total Changes	-2.7	-	-	-2.7
Current Estimate	119.9	-	-	119.9

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13a. Cost Variance Analysis (Cont'd):

a. Summary (FY 1990 Constant (Base-Year) Dollars in Millions)

	RD&E	PROC	MILCON	TOTAL
Planning Estimate	102.1	0.0	0.0	102.1
Previous Changes:				
Quantity	-	-	-	-
Schedule	-	-	-	-
Engineering	-	-	-	-
Estimating	-	-	-	-
Other	-	-	-	-
Support	-	-	-	-
Subtotal	-	-	-	-
Current Changes:				
Quantity	-	-	-	-
Schedule	-	-	-	-
Engineering	-	-	-	-
Estimating	-0.2	-	-	-0.2
Other	-	-	-	-
Support	-	-	-	-
Subtotal	-0.2	-	-	-0.2
Total Changes	-0.2	-	-	-0.2
Current Estimate	101.9	-	-	101.9

b. Previous Change Explanations --

RD&E

Economic: Revised escalation rates.

Estimating: Adjustment for current and prior year inflation.  
Refinement of estimate.

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13c. Cost Variance Analysis (Cont'd):

c. Current Change Explanations

(Dollars in Millions)  
Base-Year    Then-Year

(1) RDT&E

Adjustment for Small Business

-0.2

-0.3

Innovative Research (SBIR) reduction  
 and Congressional general reduction.  
 (Estimating)

14. Program Acquisition Unit Cost (PAUC) History (Then-Year Dollars in Millions):

Not required for Pre-Milestone II programs in accordance with  
 10 USC 2433, Title 10, USC.

15. Contract Information:

The NAS program has no large active contracts.

16. Program Funding Summary (Current Estimate in Millions of Dollars):

a. Program Status --

(1) Percent Program Completed: 38.5% (5 yrs/13 yrs)

(2) Percent Program Cost Appropriated: 38.5% (\$46.2 / \$119.9)

b. Appropriation Summary (Then-Year Dollars in Millions)

<u>Appropriation</u>	<u>Prior Years (FY90-93)</u>	<u>Budget Year (FY94)</u>	<u>Budget Year (FY95)</u>	<u>Balance To Complete (FY96-2002)</u>	<u>Total</u>
RDT&E	31.8	14.4	30.9	42.8	119.9
Procurement	-	-	-	-	-
MILCON	-	-	-	-	-
O&M	-	-	-	-	-
Total	31.8	14.4	30.9	42.8	119.9

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16c. Program Funding Summary (Cont'd):

c. Annual Summary --

		Flyaway			Total Then-Year \$			
Fiscal		FY90 Dollars		Total				Escl
Year	Qty			Base		Obli-	Ex-	Rate
		Nonrec	Rec	Year\$	Program	gated	pended	(%)

Appropriation: 2040 Research, Development, Test + Eval, Army

1990				2.9	3.0	3.0	3.0	4.3
Subtot				2.9	3.0	3.0	3.0	
Army				2.9	3.0	3.0	3.0	

Appropriation: 1319 Research, Development, Test + Eval, Navy

1990				3.9	4.0	4.0	4.0	4.3
Subtot				3.9	4.0	4.0	4.0	
Navy				3.9	4.0	4.0	4.0	

Appropriation: 3600 Research, Development, Test + Eval, AF

1990				3.9	4.0	4.0	4.0	4.0
1991				9.3	9.9	9.9	9.7	4.3
1992				3.8	4.2	4.2	4.0	2.8
1993				6.0	6.7	6.7	5.9	2.7
1994				12.5	14.4	13.1	7.1	2.5
1995				26.0	30.9			2.8
1996				15.2	18.6			2.9

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16c. Program Funding Summary (Cont'd):

Fiscal Year	Qty	Flyaway FY90 Dollars		Total Base Year\$	Total Then-Year \$			Escl Rate (%)
		Nonrec	Rec		Program	Obli- gated	Ex- pended	

Appropriation: 3600 Research, Development, Test + Eval, AF (Cont'd)

1997				10.9	13.7			3.0
1998				0.2	0.2			3.0
1999				0.1	0.1			3.0
2000				2.4	3.3			3.0
2001				2.4	3.4			3.0
2002				2.4	3.5			3.0
Subtot				95.1	112.9	37.9	30.7	
USAF				95.1	112.9	37.9	30.7	
Grand Total				101.9	119.9	44.9	37.7	

Expenditures and Obligations reflect program office records as of September 30, 1994.

17. Production Rate Data:

- a. Not applicable for Pre-Milestone II programs.
- b. Not applicable for Pre-Milestone II programs.
- c. Deliveries (Plan/Actual) -- None.
- Not applicable for pre-Milestone II programs.
- d. Not applicable for Pre-Milestone II programs.

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18. Operating and Support Costs:

Not applicable for Pre-Milestone II programs.

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